

OCT 12 2004

CHERNOFF, VILHAUER,
McCLUNG & STENZELFrom the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
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PCT

NOTIFICATION OF TRANSMITTAL OF
INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

(PCT Rule 71.1)

Date of Mailing
(day/month/year)

08 OCT 2004

Applicant's or agent's file reference

KLR 0594.027

IMPORTANT NOTIFICATION

International application No.

International filing date (day/month/year)

Priority date (day/month/year)

PCT/US03/05300

20 February 2003 (20.02.2003)

20 February 2002 (20.02.2002)

Applicant

ABILEAH, ADIEL

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US

Mail Stop PCT, Attn: IPEA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

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Authorized officer

Tarifur R Chowdhury

Telephone No. (571) 222-2287

Form PCT/IPEA/416 (July 1992)

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference KLR 0594.027	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US03/05300	International filing date (day/month/year) 20 February 2003 (20.02.2003)	Priority date (day/month/year) 20 February 2002 (20.02.2002)
International Patent Classification (IPC) or national classification and IPC IPC(7): G02F 1/136, 1/1335; H01L 29/04 and US Cl.: 349/41, 42, 48, 61, 96, 114; 257/59, 72		
Applicant ABILEAH, ADIEL		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 16 September 2003 (16.09.2003)	Date of completion of this report 03 August 2004 (03.08.2004)
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Tarifur R Chowdhury Telephone No. (703) 308-1782

Form PCT/IPEA/409 (cover sheet)(July 1998)

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed.
- ☒ the description:
pages 1-44 _____ as originally filed
pages NONE _____, filed with the demand
pages NONE _____, filed with the letter of _____.
- ☒ the claims:
pages 45-87 _____, as originally filed
pages NONE _____, as amended (together with any statement) under Article 19
pages NONE _____, filed with the demand
pages NONE _____, filed with the letter of _____.
- ☒ the drawings:
pages 1-22 _____, as originally filed
pages NONE _____, filed with the demand
pages NONE _____, filed with the letter of _____.
- ☐ the sequence listing part of the description:
pages NONE _____, as originally filed
pages NONE _____, filed with the demand
pages NONE _____, filed with the letter of _____.

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages none
- ☒ the claims, Nos. none
- ☒ the drawings, sheets/fig none

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. STATEMENT**

Novelty (N)	Claims <u>3-8, 12-15, 19-22, 24, 25 and 30-177</u>	YES
	Claims <u>10,11,16, 18, 23 and 27-29</u>	NO
Inventive Step (IS)	Claims <u>3-8, 12-15, 19-22, 24, 25 and 30-177</u>	YES
	Claims <u>1, 2, 9, 11, 16-18, 23, 26-29 and 110</u>	NO
Industrial Applicability (IA)	Claims <u>1-177</u>	YES
	Claims <u>NONE</u>	NO

2. CITATIONS AND EXPLANATIONS

Please See Continuation Sheet

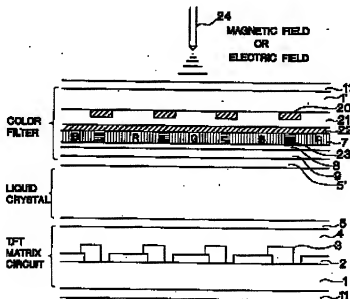
Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Claims 10, 11, 16, 18 and 23 lack novelty under PCT Article 33(2) as being anticipated by Kim, USPAT 5,568,292.

Kim discloses and shows in Fig. 5, an active matrix light sensitive display comprising:

(a) a light valve including a front polarizing element (11), a rear polarizing element (11), and a liquid crystal material (applicant's light rotating material) located between the front polarizing element and the rear polarizing element; and



(b) a plurality of thin film transistors (3) (applicant's light sensitive elements) located between either the front polarizing element or the rear polarizing element and the light rotating material. Accordingly, claims 10, 11 and 23 are anticipated.

As to claim 16, Kim also shows in Fig. 5 that the display also comprising:

(To be used when the space in any of the preceding boxes is not sufficient)

Accordingly, claim 16 is anticipated.

Claims 27-29 lack novelty under PCT Article 33(2) as being anticipated by Noritake et al., (Noritake), US 2001/0046013.

reflective display electrode (50) and counter electrode (34);

liquid crystal material (20); and

a plurality of TFT (applicant's light sensitive elements) located within the

display wherein the display selectively causing the pixels to provide a bright

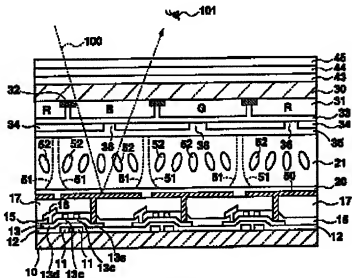


Fig. 3

and uniform image (bright and uniform image is obtained by causing the pixels to provide light).

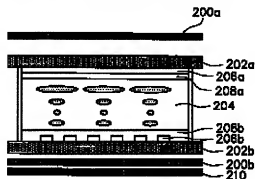
Accordingly, claims 27-29 are anticipated.

Claims 1, 2, 9, 17 and 26 lack an inventive step under PCT Article 33(3) as being obvious over Kim in view of Yang, USPAT 6,295,113.

Kim differs from the claimed invention because he does not explicitly disclose the limitation such as changing an electric potential between the front and the rear electrode layer to selectively modify portions of the liquid crystal material to change the polarization of the light incident thereon.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)



Yang discloses a liquid crystal display comprising transparent front (206a) and rear electrode (206b) layer (Fig. 2). Yang also discloses that by continuously altering the applied voltage between transparent electrodes (206a and 206b), various colors can be displayed by variation of polarization status of red, green and blue lights with different wavelengths (col. 6, lines 3-6).

Yang is evidence that ordinary workers in the art of liquid crystal would find a reason, suggestion or motivation to change the electrical potential between two transparent electrodes.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the display of Kim by changing the electrical potential between the rear electrode layer and the front electrode layer to selectively modify portions of the liquid crystal material to change the polarization of the incident light so that various color can be displayed.

Accordingly, claims 1, 2, 9 and 26 would have been obvious.

As to claim 17, using a reflective electrode to obtain a reflective display is common and known in the art and thus would have been obvious.

Claims 3-8, 12-15, 19-22, 24, 25 and 30-177 meet the criteria set out in PCT Article 33(2)-(3), because as to claims 3-8, 12, 19, 24, 30, 38-44 and 147-177, the prior art does not teach or fairly suggest the claimed liquid crystal display device wherein each of the light sensitive elements includes a first transistor that senses ambient light and a second transistor that is inhibited from sensing ambient light with respect to the first transistor in combination with other recited limitations. Further, as to claims 13-15, 20-22, 25, 31-37, 46-50, 74-75, 108-118, the prior arts of record does not teach or fairly suggest the claimed liquid crystal display/light sensitive display that also includes a processor that receives information from the light sensitive elements and determines at least one of regions of the display where ambient light is inhibited from reaching the light sensitive elements and regions of the display where light in excess of the ambient light reaches the light sensitive element in combination with other recited limitations. Further, as to claims 45, 82-102 the prior art of record does not teach or suggest the claimed light sensitive display comprising various elements as claimed, more specifically modifying the intensity of the backlight based upon the light sensitive element that is located within the display or based upon ambient light conditions or based upon the addressing of the display. As to claims 51-70, the prior arts of record do not fairly teach or suggest the claimed liquid crystal display comprising various elements as claimed, more specifically a plurality of elongate conductors each of which is electrically connected with a respective one of the light sensitive elements wherein the elongate conductors are arranged in a manner with the pattern of the pixel electrodes in combination with other recited limitations. As to claims 71-73, the prior arts of record do not fairly teach or suggest the claimed liquid crystal display comprising various elements as claimed, more specifically wherein data is provided to a respective pair of light sensitive elements and pixel electrodes during a scan time of a scanning electrode in combination with other recited limitations. As to claims 76-81, the prior arts of record do not fairly teach or suggest the claimed light sensitive display comprising various elements as claimed, more specifically a processor that receives information from the light sensitive elements for the current frame and determines a location where the display has been touched and wherein the determination is further based upon data from a previous frame. As to claims 103-107, the prior arts of record do not fairly teach or suggest the claimed liquid crystal display comprising various elements as claimed, more specifically wherein the total internal reflection of the light guide is disrupted by contacting the display with a pointing device, where the pointing device has an index of refraction within 0.5 of the index of refraction of the light guide in combination with other recited limitations. As to claims 119, the prior arts of record do not fairly teach or suggest the claimed light sensitive display comprising various elements as claimed, more specifically a sampling circuit that reads data from the plurality of light sensitive elements at a rate corresponding with the refresh rate of the corresponding portion of the display, wherein the display includes at least two different refresh rate, in combination with other recitations of the claim. As to claims 120-131, the prior arts of record do not fairly teach or suggest the claimed liquid crystal display comprising various elements as claimed, more specifically a light guide together with an associated light source located in front of the front electrode layer to provide light wherein the light has a color spectrum less than ambient light and a color filter positioned between the light guide and at least one of the light sensitive elements wherein the color reduces the transmission of the ambient light to an extent greater than light from the light source. As to claims 132-139, the prior arts of record do not fairly teach or suggest the claimed light sensitive display comprising various elements as claimed, more specifically first and second amount of different additional light provided to the light sensitive elements during the subsequent frames and the display system determining the

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

location of the additional light on the display based upon sensing a portion of the first and second additional light. As to claim 140, the prior arts of record do not fairly teach or suggest the claimed liquid crystal display comprising various elements as claimed, more specifically wherein at least one of a greater number of the light sensitive elements are associated with the blue pixel electrodes than the green pixel electrodes and the red pixel electrodes and non-blue pixel electrodes. As to claims 141, 142, 144 and 145, the prior arts of record do not fairly teach or suggest the claimed liquid crystal display comprising various elements as claimed, more specifically a light blocking layer forwardly disposed from the front electrode layer that inhibits ambient light from striking a plurality of the light sensitive elements while defining openings therein to permit ambient light to strike a plurality of other the light sensitive elements. As to claim 143, the prior arts of record do not fairly teach or suggest the claimed liquid crystal display comprising various elements as claimed, more specifically a substantially non-filtered optical path from the plurality of the light sensitive elements to a viewer of the display in combination with recited limitations. As to claim 146, the prior arts of record do not fairly teach or suggest the claimed liquid crystal display comprising various elements as claimed, more specifically changing an electrical potential between the rear electrode layer and the front electrode layer to selectively modify portions of the liquid crystal material to change the polarization of the light incident thereon, a plurality of light sensitive elements located together with the rear electrode layer and a pen that provides a signal to the light sensitive elements indicative of the pressure exerted against the device.

Claims 1-177 meet the criteria set out in PCT Article 33(4), and thus industrial applicability because the subject matter claimed can be made or used in industry.

Light sensitive
Display

PATENT COOPERATION TREATY

DUCKETED: 11/10/03 RECEIVED

REMINDED BY: SAJ

DEC 22 2003

CHERNOFF, VILHAUER,
MCCLUNG & STENZEL

KLR 0594

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
KEVIN L. RUSSELL
CHERNOFF VILHAUER MCCLUNG & STENZEL, LLP
602 SW SECOND AVENUE
SUITE 1600 ODS TOWER
PORTLAND, OR 97204

PCT

WRITTEN OPINION

(PCT Rule 66)

Date of Mailing
(day/month/year) 17 DEC 2003

REPLY DUE

within 1 months/days from
the above date of mailing

Applicant's or agent's file reference

KLR 0594.0271

International application No.

International filing date (day/month/year)

Priority date (day/month/year)

PCT/US03/05300

20 February 2003 (20.02.2003)

20 February 2002 (20.02.2002)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): G02F 1/136, 1/1335; H01L 29/04 and US Cl.: 349/41, 42, 48, 61, 96, 114; 257/59, 72

Applicant

ABILEAH, ADIEL

1. This written opinion is the first (first, etc.) drawn by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2 (a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

3. The applicant is hereby invited to reply to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension. See Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 20 June 2004 (20.06.2004).

Name and mailing address of the IPEA/US

Mail Stop PCT, Attn: IPEA/US

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

Facsimile No. (703)305-3230

Authorized officer

Tarifur R Chowdhury

Telephone No. (703) 308-1782

Form PCT/IPEA/408 (cover sheet)(July 1998)

I. Basis of the opinion

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☒ the description:
pages 1-44 _____, as originally filed
pages NONE _____, filed with the demand
pages NONE _____, filed with the letter of _____.
- ☒ the claims:
pages 45-87 _____, as originally filed
pages NONE _____, as amended (together with any statement) under Article 19
pages NONE _____, filed with the demand
pages NONE _____, filed with the letter of _____.
- ☒ the drawings:
pages 1-22 _____, as originally filed
pages NONE _____, filed with the demand
pages NONE _____, filed with the letter of _____.
- ☐ the sequence listing part of the description:
pages NONE _____, as originally filed
pages NONE _____, filed with the demand
pages NONE _____, filed with the letter of _____.

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages none _____
- ☒ the claims, Nos. none _____
- ☒ the drawings, sheets/fig none _____

5. ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed."

WRITTEN OPINION

International application No.
PCT/US03/05300

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. STATEMENT

Novelty (N)	Claims <u>3-8, 12-15, 19-22, 24, 25 and 30-177</u>	YES
	Claims <u>10, 11, 16, 18, 23 and 27-29</u>	NO
Inventive Step (IS)	Claims <u>3-8, 12-15, 19-22, 24, 25 and 30-177</u>	YES
	Claims <u>1, 2, 9, 10, 11, 16-18, 23 and 26-29</u>	NO
Industrial Applicability (IA)	Claims <u>1-177</u>	YES
	Claims <u>NONE</u>	NO

2. CITATIONS AND EXPLANATIONS

Please See Continuation Sheet

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

TIME LIMIT:

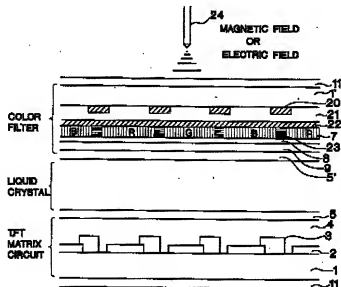
The time limit set for response to a Written Opinion may not be extended. 37 CFR 1.484(d). Any response received after the expiration of the time limit set in the Written Opinion will not be considered in preparing the International Preliminary Examination Report.

V. 2. Citations and Explanations:

Claims 10, 11, 16, 18 and 23 lack novelty under PCT Article 33(2) as being anticipated by Kim, USPAT 5,568,292.

Kim discloses and shows in Fig. 5, an active matrix light sensitive display comprising:

(a) a light valve including a front polarizing element (11), a rear polarizing element (11), and a liquid crystal material (applicant's light rotating material) located between the front polarizing element and the rear polarizing element; and



(b) a plurality of thin film transistors (3) (applicant's light sensitive elements)

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

located between either the front polarizing element or the rear polarizing element and the light rotating material. Accordingly, claims 10, 11 and 23 are anticipated.

As to claim 16, Kim also shows in Fig. 5 that the display also comprising: a transparent counter electrode layer (9) (applicant's front electrode layer), a transparent picture element electrode (2) (applicant's rear electrode layer), and a liquid crystal material (applicant's light rotating material) located between the front electrode layer and the rear electrode layer wherein the front electrode layer and the rear electrode layer defining a plurality of pixels within the light rotating material.

Accordingly, claim 16 is anticipated.

As to claim 18, Kim also shows in Fig. 5 that the plurality of light sensitive elements (3) are located at least partially between the pixels, with respect to a perpendicular direction to the front of the display.

Claims 27-29 lack novelty under PCT Article 33(2) as being anticipated by Noritake et al., (Noritake), US 2001/0046013.

Noritake discloses (page 2, paragraph 0032-0035) and shows in Fig. 3, a light sensitive active matrix liquid crystal display comprising:

reflective display electrode (50) and counter electrode (34);

liquid crystal material (20); and

a plurality of TFT (applicant's light sensitive elements) located within the

display wherein the display selectively causing the pixels to provide a bright

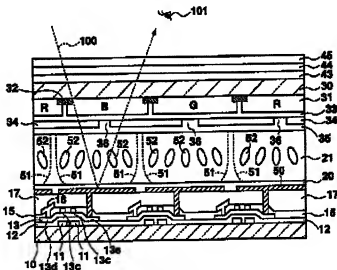


Fig. 3

and uniform image (bright and uniform image is obtained by causing the pixels to provide light).

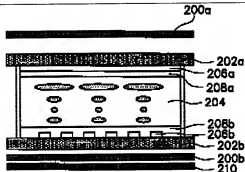
Accordingly, claims 27-29 are anticipated.

Claims 1, 2, 9, 17 and 26 lack an inventive step under PCT Article 33(3) as being obvious over Kim in view of Yang, USPAT 6,295,113.

Kim differs from the claimed invention because he does not explicitly disclose the limitation such as changing an electric potential between the front and the rear electrode layer to selectively modify portions of the liquid crystal material to change the polarization of the light incident thereon.

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)



Yang discloses a liquid crystal display comprising transparent front (206a) and rear electrode (206b) layer (Fig. 2). Yang also discloses that by continuously altering the applied voltage between transparent electrodes (206a and 206b), various colors can be displayed by variation of polarization status of red, green and blue lights with different wavelengths (col. 6, lines 3-6).

Yang is evidence that ordinary workers in the art of liquid crystal would find a reason, suggestion or motivation to change the electrical potential between two transparent electrodes.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the display of Kim by changing the electrical potential between the rear electrode layer and the front electrode layer to selectively modify portions of the liquid crystal material to change the polarization of the incident light so that various color can be displayed.

Accordingly, claims 1, 2, 9 and 26 would have been obvious.

As to claim 17, using a reflective electrode to obtain a reflective display is common and known in the art and thus would have been obvious.

Claims 3-8, 12-15, 19-22, 24, 25 and 30-177 meet the criteria set out in PCT Article 33(2)-(3), because as to claims 3-8, 12, 19, 24, 30, 38-44 and 147-177, the prior art does not teach or fairly suggest the claimed liquid crystal display device wherein each of the light sensitive elements includes a first transistor that senses ambient light and a second transistor that is inhibited from sensing ambient light with respect to the first transistor in combination with other recited limitations. Further, as to claims 13-15, 20-22, 25, 31-37, 46-50, 74-75, 108-118, the prior arts of record does not teach or fairly suggest the claimed liquid crystal display/light sensitive display that also includes a processor that receives information from the light sensitive elements and determines at least one of regions of the display where ambient light is inhibited from reaching the light sensitive elements and regions of the display where light in excess of the ambient light reaches the light sensitive element in combination with other recited limitations. Further, as to claims 45, 82-102 the prior art of record does not teach or suggest the claimed light sensitive display comprising various elements as claimed, more specifically modifying the intensity of the backlight based upon the light sensitive element that is located within the display or based upon ambient light conditions or based upon the addressing of the display. As to claims 51-70, the prior arts of record do not fairly teach or suggest the claimed liquid crystal display comprising various elements as claimed, more specifically a plurality of elongate conductors each of which is electrically connected with a respective one of the light sensitive elements wherein the elongate conductors are arranged in a manner with the pattern of the pixel electrodes in combination with other recited limitations. As to claims 71-73, the prior arts of record do not fairly teach or suggest the claimed liquid crystal display comprising various elements as claimed, more specifically wherein data is provided to a respective pair of light sensitive elements and pixel electrodes during a scan time of a scanning electrode in combination with other recited limitations. As to claims 76-81, the prior arts of record do not fairly teach or suggest the claimed light sensitive display comprising various elements as claimed, more specifically a processor that receives information from the light sensitive elements for the current frame and determines a location where the display has been touched and wherein the determination is further based upon data from a previous frame. As to claims 103-107, the prior arts of record do not fairly teach or suggest the claimed liquid crystal display comprising various elements as claimed, more specifically wherein the total internal reflection of the light guide is disrupted by contacting the display with a pointing device, where the pointing device has an index of refraction within 0.5 of the index of refraction of the light guide in combination with other recited limitations. As to claims 119, the prior arts of record do not fairly teach or suggest the claimed light sensitive display comprising various elements as claimed, more specifically a sampling circuit that reads data from the plurality of light sensitive elements at a rate corresponding with the refresh rate of the corresponding portion of the display, wherein the display includes at least two different refresh rate, in combination with other recitations of the claim. As to claims 120-131, the prior arts of record do not fairly teach or suggest the claimed liquid crystal display comprising various elements as claimed, more specifically a light guide together with an associated light source located in front of the front electrode layer to provide light wherein the light has a color spectrum less than ambient light and a color filter positioned between the light guide and at least one of the light sensitive elements wherein the color reduces the transmission of the ambient light to an extent greater than light from the light source. As to claims 132-139, the prior arts of record do not fairly teach or suggest the claimed light sensitive display comprising various elements as claimed, more specifically first and second amount of different additional light provided to the light sensitive elements during the subsequent frames and the display system determining the location of the additional light on the display based upon sensing a portion of the first and second additional light. As to claim 140, the prior arts of record do not fairly teach or suggest the claimed liquid crystal display comprising various elements as claimed, more

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

specifically wherein at least one of a greater number of the light sensitive elements are associated with the blue pixel electrodes than the green pixel electrodes and the red pixel electrodes and non-blue pixel electrodes. As to claims 141, 142, 144 and 145, the prior arts of record do not fairly teach or suggest the claimed liquid crystal display comprising various elements as claimed, more specifically a light blocking layer forwardly disposed from the front electrode layer that inhibits ambient light from striking a plurality of the light sensitive elements while defining openings therein to permit ambient light to strike a plurality of other the light sensitive elements. As to claim 143, the prior arts of record do not fairly teach or suggest the claimed liquid crystal display comprising various elements as claimed, more specifically a substantially non-filtered optical path from the plurality of the light sensitive elements to a viewer of the display in combination with recited limitations. As to claim 146, the prior arts of record do not fairly teach or suggest the claimed liquid crystal display comprising various elements as claimed, more specifically changing an electrical potential between the rear electrode layer and the front electrode layer to selectively modify portions of the liquid crystal material to change the polarization of the light incident thereon, a plurality of light sensitive elements located together with the rear electrode layer and a pen that provides a signal to the light sensitive elements indicative of the pressure exerted against the device.

Claims 1-177 meet the criteria set out in PCT Article 33(4), and thus industrial applicability because the subject matter claimed can be made or used in industry.

----- NEW CITATIONS -----